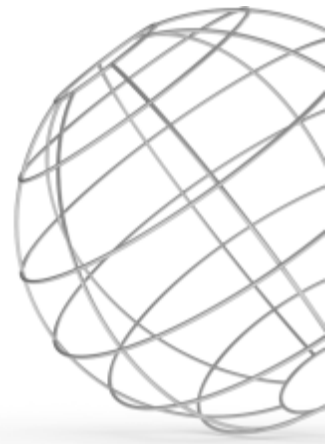




# R358.10

EN: 1.4550  
Type: 347



R358.10 is a columbium (Cb) stabilized stainless steel with an excellent resistance to intergranular corrosion following exposure to temp. in the chromium carbide precipitation range from 430-820°C (810-1510°F). This steel is also advantageous for high temp. service because of good mechanical properties. Exposure in the temp. range 430-820°C (810-1510°F), overall corrosion resistance is reduced less in this grade than when compared to the Ti-alloyed R359.10-steel (Type 321). Typical applications are wire for welded constructions, elevated temperatures and chemical handling equipments.

## CHEMICAL COMPOSITION (Nominal) %

| C     | Si   | Mn   | Cr   | Ni  | Mo    | N      | Nb*  |
|-------|------|------|------|-----|-------|--------|------|
| 0.025 | 0.40 | 1.20 | 17.8 | 9.2 | <0.30 | <0.060 | 0.45 |

PRE: 19 (PRE = Cr + 3.1 x Mo + 25 x N)

Comments: \*min-10x%C

## PHYSICAL PROPERTIES

Condition: Annealed

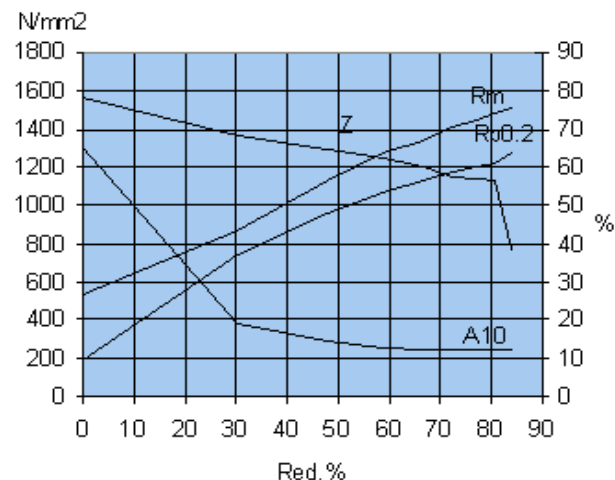
|                          |                         |
|--------------------------|-------------------------|
| Density                  | 7.9 g / cm <sup>3</sup> |
| Modulus of elasticity, E | 200 000 GPa             |
| Specific heat 0-100°C    | 480 J / kg°C            |

## TYPICAL MECHANICAL PROPERTIES

Condition: Annealed

|                  |       |                             |
|------------------|-------|-----------------------------|
| Proof strength   | Rp0.2 | min.200 N / mm <sup>2</sup> |
| Tensile strength | Rm    | 550-650 N / mm <sup>2</sup> |
| Elongation       | A10   | min.40 %                    |

## DEFORMATION GRAPH



## THERMAL TREATMENT

|                       |              |
|-----------------------|--------------|
| Annealing temperature | 1050-1120 °C |
|                       | 1920-2050 °F |
|                       |              |
|                       |              |

## MAX. OPERATING TEMPERATURE

|                                  |                |
|----------------------------------|----------------|
| Diss. ammonia / Carburizing atm. | 815 / 815 °C   |
|                                  | 1500 / 1500 °F |
| Scaling temp. in air             | 850 °C         |
|                                  | 1560 °F        |

## THERMAL CONDUCTIVITY

|        |             |
|--------|-------------|
| 20 °C  | 15.0 W / mK |
| 100 °C | 15.5 W / mK |
| 200 °C | 17.5 W / mK |
| 400 °C | 20.0 W / mK |
| 600 °C | 22.5 W / mK |
| 800 °C | 25.5 W / mK |

## THERMAL EXPANSION

Thermal expansion per °C x 10<sup>-6</sup> from 20°C to:

|         |      |
|---------|------|
| 100 °C  | 16.0 |
| 200 °C  | 16.5 |
| 400 °C  | 17.5 |
| 600 °C  | 19.0 |
| 800 °C  | 19.5 |
| 1000 °C | 20.0 |

## RESISTIVITY

|        |           |
|--------|-----------|
| 20 °C  | 700 μΩmm  |
| 100 °C | 750 μΩmm  |
| 200 °C | 800 μΩmm  |
| 400 °C | 950 μΩmm  |
| 600 °C | 1050 μΩmm |
| 800 °C | 1150 μΩmm |